

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

Claims 1.-17. (Canceled)

Claim 18. (Original) A dispenser assembly comprising:  
a dispenser chip including a dispenser body including a vertical channel; and  
a sample chip having a base and a sample structure, the sample structure comprising a pillar and a sample surface, wherein the vertical channel of the dispenser chip is cooperatively structured to receive the pillar.

Claim 19. (Original) The dispenser assembly of claim 19 further comprising:  
a seal member between the dispenser body and the base of the sample chip.

Claims 20-33. (Canceled)

Claim 34. (Amended) A method of processing an analyte, the method comprising:  
processing an analyte on a sample surface on a sample chip;  
transferring the processed analyte through a transfer-separation downstream of the sample surface, wherein the transfer-separation channel is in a microfluidic chip above the sample chip; and  
analyzing the processed analyte downstream of the sample surface.

Claim 35. (Original) The method of claim 34 wherein analyzing the processed sample comprises analyzing the processed sample using mass spectrometry.

Claim 36. (Original) The method of claim 34 further comprising, prior to processing the sample:  
inserting the sample surface into a fluid channel in a dispenser chip, wherein the sample surface is on a pillar;  
depositing a liquid sample on the sample surface using the dispenser chip; and

binding an analyte in the liquid sample to the sample surface.

Claim 37. (Original) The method of claim 34 wherein processing comprises:  
dispensing a reagent on the sample surface; and  
cleaving the analyte into subunits.

Claim 38. (Original) A microfluidic chip comprising:  
a body having a bottom surface; and  
a plurality of vertical channels in the body, wherein each opening is cooperatively  
structured to receive a pillar of a sample chip.

Claim 39. (Original) The microfluidic chip of claim 38 wherein the body further  
comprises:  
a plurality of horizontal delivery channels in communication with the plurality of  
vertical channels.

Claim 40. (Original) The microfluidic chip of claim 38 wherein the body further  
comprises:  
a plurality of reservoirs upstream of the plurality of vertical fluid channels.

Claim 41. (Original) The microfluidic chip of claim 38 the body comprises  
silicon, glass, or polymeric materials.

Claim 42. (Original) The microfluidic chip of claim 38 wherein surfaces of the  
body forming each vertical channel are hydrophobic.

Claim 43. (Original) The microfluidic chip of claim 38 wherein surfaces of the  
body forming each vertical channel are hydrophilic.

Claims 44.-55. (Canceled)

Claim 56. (New) The dispenser assembly of claim 18 wherein the sample chip  
comprises silicon.

Claim 57. (New) The dispenser assembly of claim 18 wherein the sample chip further comprises a capture agent on the sample surface.

Claim 58. (New) The dispenser assembly of claim 18 wherein the dispenser body comprises silicon.

Claim 59. (New) The dispenser assembly of claim 18 wherein the sample chip further comprises a capture agent on the sample surface, and wherein an analyte is present in the vertical channel in the dispenser chip.

Claim 60. (New) The dispenser assembly of claim 18 wherein the sample chip comprises more than 100 pillars.

Claim 61. (New) The dispenser assembly of claim 18 wherein the pillar has an aspect ratio greater than about 1.